

Erect, hairy biennial or perennial herb forming offsets. Roots fusiform, slightly thickened. Stems erect, hollow, deeply furrowed, pubescent at the nodes below, glabrous and branching above. Leaves triangular, 2–3-pinnately compound, somewhat pubescent beneath, slightly pubescent to glabrous above, up to 30 cm long; sheaths with short spreading hairs along nerves; leaflets ovate, pinnatifid and coarsely serrate, with scabrous margins. Umbels compound, terminal, the earliest often overtopped by lateral branches, 2–6 cm in diam.; peduncles (3–)6–12, glabrous, 1–4 cm long; involucre lacking; bracteoles 4–6, ovate, aristate, ciliate, often pink, spreading or deflexed, 2–5 mm long; pedicels about equalling bracteoles at anthesis but elongating at maturity. Flowers 3–4 mm in diam.; calyx minute or lacking; petals white, notched, with an inflexed point, the peripheral slightly elongated. Fruit oblong-ovoid, smooth, 5–10 mm long, with a short beak; commissures constricted; carpels subterete, tapering into a long beak; ridges confined to the beak; styles slender, spreading.

Anthriscus sylvestris may be distinguished from *A. scandicina* (Weber) Mansfeld by the former's short-beaked, ribless fruit.

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REVIEW

The Natural History of Puget Sound Country. By ARTHUR R. KRUCKEBERG. 1991. University of Washington Press, Seattle and London. xxiv + 468 pp. \$29.95.

Puget Sound country—as defined by Seattle botanist Arthur Kruckeberg, who has lived in it for over four decades—is the 10,000 square mile drainage basin whose waters run into that “grand inland sea . . . so lavishly endowed by Nature,” located in northwestern Washington state and southwestern British Columbia. This region includes some of the most spectacular scenery in the hemisphere—the Cascade and Olympic ranges, large freshwater lakes, a complex geology, and the intricate waterways of the Sound itself.

At the time of the first extensive exploration of the Sound by George Vancouver's expedition in 1792, the “audaciously rich cultures” of coastal Indians in the region lived in a state of “accommodation, not overkill” as a way of life. The forests were vast, the rivers and streams pure, and the seas abounded with a seemingly endless supply of food. Kruckeberg argues, however, that this status of apparent harmony with nature stemmed not from an aboriginal “kindness” to the land, but was a consequence of lack of intent or necessity to overexploit local resources. In contrast, the first Europeans to settle in the region early in the 19th century were there precisely to exploit its natural bounty. According to the author, “Puget Sound country after . . . the 1850s was so cataclysmically altered and with such unanimity of purpose that no single voice of conscience would have effectively stemmed the onslaught of the land.”

Kruckeberg's intent in this book is not to chronicle the destruction of the biota and landscape of Puget Sound country. Rather, his aim is to describe the natural

history of the region and the effects of its burgeoning population and, ultimately, to give readers “a measure of understanding about the workings of natural systems in the Puget Sound basin. Central to the matter of choosing alternatives is *understanding*; that is the mission of this book.” This understanding and appreciation, the author hopes, can lead to “wise decisions and actions to preserve and protect what is left of the . . . basin’s natural beauty and wild, self-sustaining life in variety.”

Kruckeberg’s sweep of natural history is impressively broad. He describes the landscape of the region and its geological nature and history, climate, the marine environment and its inhabitants, terrestrial habitats and their inhabitants, the importance of water in the region for the quality of life, the aboriginal peoples that once populated the basin, and the European impacts on Puget Sound country. Thus, he ranges through geology, hydrology, oceanography, limnology, fisheries, forestry, anthropology, social and economic history, and other disciplines outside the realm of zoology and botany that conventionally defines natural history.

Since I am a native of the Pacific Northwest, have family ties in Seattle, and lived there for two years as Art Kruckeberg’s first graduate student, I cannot claim to be completely objective about the general appeal of this book to audiences beyond the Puget Sound region. That the local audience was receptive is indicated by the fact that the first printing of 10,000 copies—large for a university press book—has nearly sold out; hopefully, this may mean that Kruckeberg’s important message has reached the influential audience for whom it is intended.

The book’s title reflects the provinciality of its setting, but Kruckeberg’s perspectives will interest biologists outside Puget Sound country. It is pioneering in its intent and in the vehicle via which this intent is realized. It provides environmentalists, biologists, and others concerned about the declining quality of life with the kinds of arguments and perspectives that can be almost universally employed, arguments that must be accepted and implemented if human populations can ever achieve a *modus vivendi* with what remains of their natural environment. Herbert Mason, Kruckeberg’s doctoral mentor at Berkeley and in recent years a resident of Puget Sound country, long ago emphasized the role of ecological extremes (rather than modes) in determining distribution patterns of plants. Likewise, Kruckeberg describes the biotic impacts of ephemeral but extreme events such as volcanic eruptions, mud flows, climatic change, wind storms, fires, freezes, floods, and the intentional as well as unintentional introductions of alien species. Even the problematic origin of Mima mounds (so named after their “type locality” in the region) merits 14 pages of interesting discussion and analysis. Here and elsewhere, Kruckeberg emphasizes that features such as topography, substrate chemistry, and other local phenomena have a profound effect on the nature of the local biota in a region with a more or less uniform climate. Kruckeberg’s aim is to instill “ecological understanding”; though his examples may be regional, the principles they illustrate and the arguments they provide are universal.

This book is gracefully written and its themes are eloquently argued. It is sumptuously illustrated with over 300 photographs, maps, graphs, diagrams, and line drawings. Although it is a model of books that should exist for every metropolitan region of the continent, few, if any, prospective authors are likely to have the combination of intellect, breadth, and dedication required to produce such a book. In the course of exposition, Kruckeberg offers this thought-provoking quotation from *The Fragmented Forest*: “natural resources are not given to us by our fathers, but are loaned to us by our children.” Perhaps when this perspective is widely adopted, we can feel that our planet is in good hands.

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